

## Claims

- [c1] 1..A waveguide transition assembly for an antenna having a feed assembly with a spigot, comprising:
  - a transition assembly having a waveguide formed there through, adapted to mate with the spigot;
  - the transition assembly having a clamping groove formed in an outer surface and a plurality of cut-outs in the outer surface extending axially from a spigot end to the clamping groove,
  - a plurality of clamp screws coupled to a base of the antenna located to allow passage along the plurality of cut-outs to the clamping groove as the transition assembly is seated upon the spigot and rotated;
  - the clamp screws having clamp screw heads which upon entry into the clamping groove retain the transition assembly upon the spigot.
- [c2] 2. The assembly of claim 1, further including an aperture in the waveguide.
- [c3] 3.The assembly of claim 2, wherein the aperture is removable from the transition assembly.
- [c4] 4.The assembly of claim 2, further including alignment

indicia on the transition assembly and base whereby the aperture may be aligned at a desired orientation.

- [c5] 5.The assembly of claim 4, wherein the alignment indicia are grooves.
- [c6] 6.The assembly of claim 1, further including a guide surface formed proximate each of the plurality of clamp screws;  
the guide surfaces adapted to indicate a height at which the clamp screw heads will engage the clamp groove when the transition assembly is seated upon the spigot.
- [c7] 7.The assembly of claim 1, further including an anti-vibration coating upon one of the plurality of clamping screws and the clamping groove.
- [c8] 8.The assembly of claim 1, further including a groove on the feed assembly proximate the spigot and one of a gasket and an o-ring located in the groove.
- [c9] 9.A waveguide transition assembly for an antenna having a feed assembly with a spigot, comprising:  
a transition assembly having a waveguide with an aperture formed there through, adapted to mate with the spigot;  
the transition assembly having a clamping groove formed in an outer surface of the transition assembly

and a plurality of cut-outs in the outer surface extending axially from a spigot end to the clamping groove, a plurality of clamp screws coupled to a base of the antenna located to allow passage through the plurality of cut-outs; the clamp screws having clamp screw heads which upon entry into the clamping groove retain the transition assembly upon the spigot; a plurality of corresponding alignment indicia on the transition assembly and base whereby the aperture may be aligned at a desired orientation; and a guide surface formed proximate each of the plurality of clamp screws; the guide surface adapted to indicate a height at which the clamp screw heads will engage the clamp groove when the transition assembly is seated upon the spigot and rotated.

- [c10] 10. The assembly of claim 9, wherein the alignment indicia are grooves.
- [c11] 11. The assembly of claim 9, further including an anti-vibration coating upon one of the plurality of clamping screws and the clamping groove.
- [c12] 12. The assembly of claim 9, further including a groove on the feed assembly proximate the spigot and one of a

gasket and an o-ring located in the groove.

- [c13] 13. The assembly of claim 9, wherein the aperture is removable from the transition assembly.
- [c14] 14. A method for adjusting the polarization of an antenna, comprising the steps of:
  - loosening clamp screws having clamp screw heads which are engaged with a clamp groove formed in a transition assembly having a waveguide with an aperture formed there through;
  - rotating the transition assembly until a desired polarization is reached;
  - tightening the clamp screws to secure the transition assembly from further rotation.
- [c15] 15. The method of claim 14, wherein the transition assembly and a base of the antenna have alignment indicia and the rotation of the transition assembly is made to align the transition assembly and the base alignment indicia together.
- [c16] 16..A waveguide transition assembly for an antenna having a feed assembly with a spigot, comprising:
  - a transition assembly having a waveguide formed there through, adapted to mate with the spigot;
  - the transition assembly having a clamping groove

formed in an outer surface and at least one cut-out in the outer surface extending axially from a spigot end to the clamping groove,  
at least one clamp screw and at least one means for engaging coupled to a base of the antenna is located to allow passage along the at least one cut-out to the clamping groove as the transition assembly is seated upon the spigot and then rotated;  
the means for engaging, upon entry into the clamping groove, retains the transition assembly upon the spigot;  
the means for engaging secured by the clamp screws.

- [c17] 17. The assembly of claim 16, wherein the means for engaging is one of a clamp screw head, a washer, a tab and a keyed retaining ring.
- [c18] 18. The assembly of claim 16, wherein the alignment indicia are grooves.
- [c19] 19. The assembly of claim 16, further including an anti-vibration coating upon one of the plurality of clamping screws and the clamping groove.
- [c20] 20. The assembly of claim 16, wherein the aperture is removable from the transition assembly.